Microsoft Identity and Access Strategy

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Situation

- Password fatigue
- Fraud, theft, phishing, pharming
- Heightened sensitivity to privacy, tracking
- Identity recognized by CxO as top business problem
- Demand for federated applications

“Laws of Identity”

1. **Control:** only reveal information identifying user with user’s consent
2. **Minimal disclosure:** solution disclosing least identifying information is most stable long term
3. **Fewest parties:** disclosure limited to parties having necessary and justifiable place in a relationship
4. **Directed identity:** must support omnidirectional and unidirectional identifiers
5. **Pluralism:** must support and channel multiple technologies run by multiple providers
6. **Human integration:** human user is component of distributed system integrated through unambiguous and safe communications mechanisms
7. **Contexts:** facilitate negotiation of mechanism between relying party and user of specific identity, while presenting consistent human and technical interface

Federated Identity Approach

- Meta-system
  - Embrace already deployed mechanisms
  - Allow evolution
- Claims-based model
  - *Claims* delivered in *security tokens* from *claims providers* to *relying parties*
- Be open with the industry
  - Use open protocols
  - Make implementation notes freely available

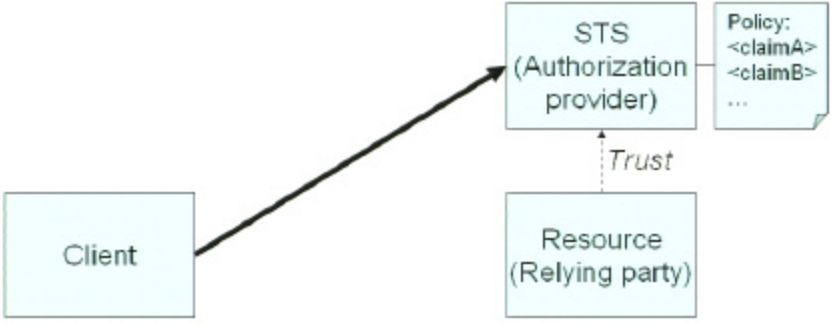
Claims

- Cryptographically verifiable information about one digital actor which another actor claims to be true
  - More than just identity assertions
- Claims transformation
  - At organizational or technical boundaries, one set of claims can be transformed into another
- Relying party specifies claims required and candidate claim providers
  - Authentication and authorization through single mechanism
- Claims delivered in security tokens (e.g. SAML) generated by Security Token Servers (STS)

Claims in WS-* Architecture

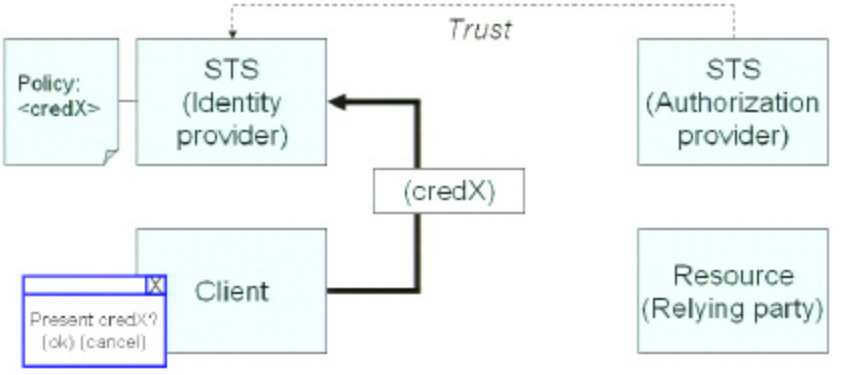
- Client to perform operation X at resource
- Client reads metadata associated with operation including policy
  - Policy indicates required claims, candidate claim providers necessary to perform operation
  - WS-MetadataExchange, WS-Policy, WS-SecurityPolicy

Claims in WS-* Architecture



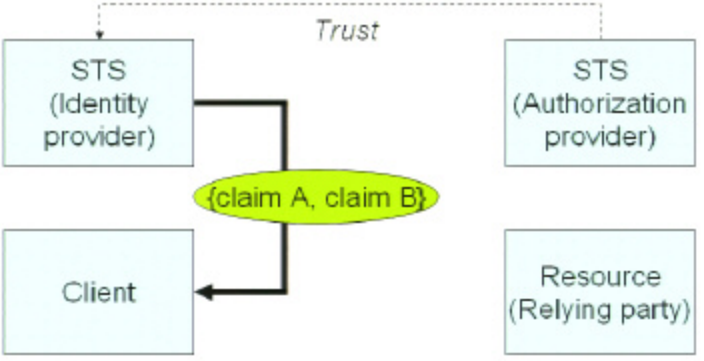
- Client requests security token with required claims from STS
  - WS-Trust
- STS policy indicates
  - Credentials necessary to obtain security token, or
  - Required claims, candidate claim providers to obtain security token

Claims in WS-* Architecture



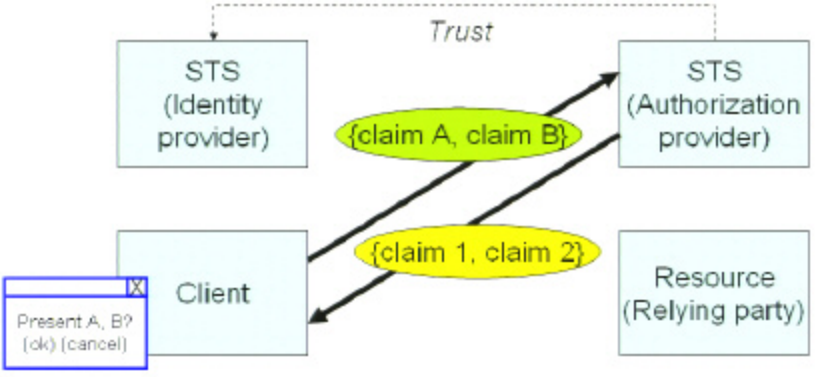
- Client requests security token from STS
- STS policy indicates credentials to obtain security token
- End user approves release of credential
- Client presents credential

Claims in WS-* Architecture



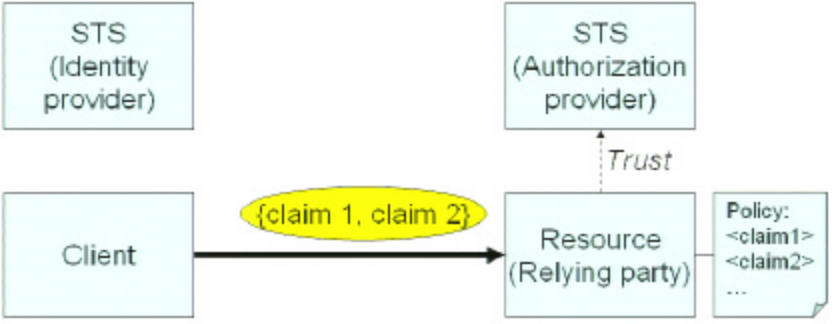
- STS returns security token

Claims in WS-* Architecture



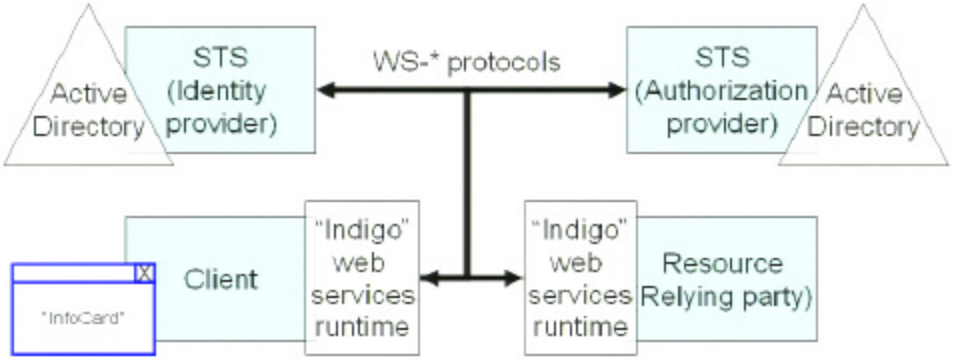
- End user approves release of claims
- Client presents security token to STS
- STS translates claims, returns security token

Claims in WS-* Architecture



- Client presents security token to resource

Microsoft Product Offering



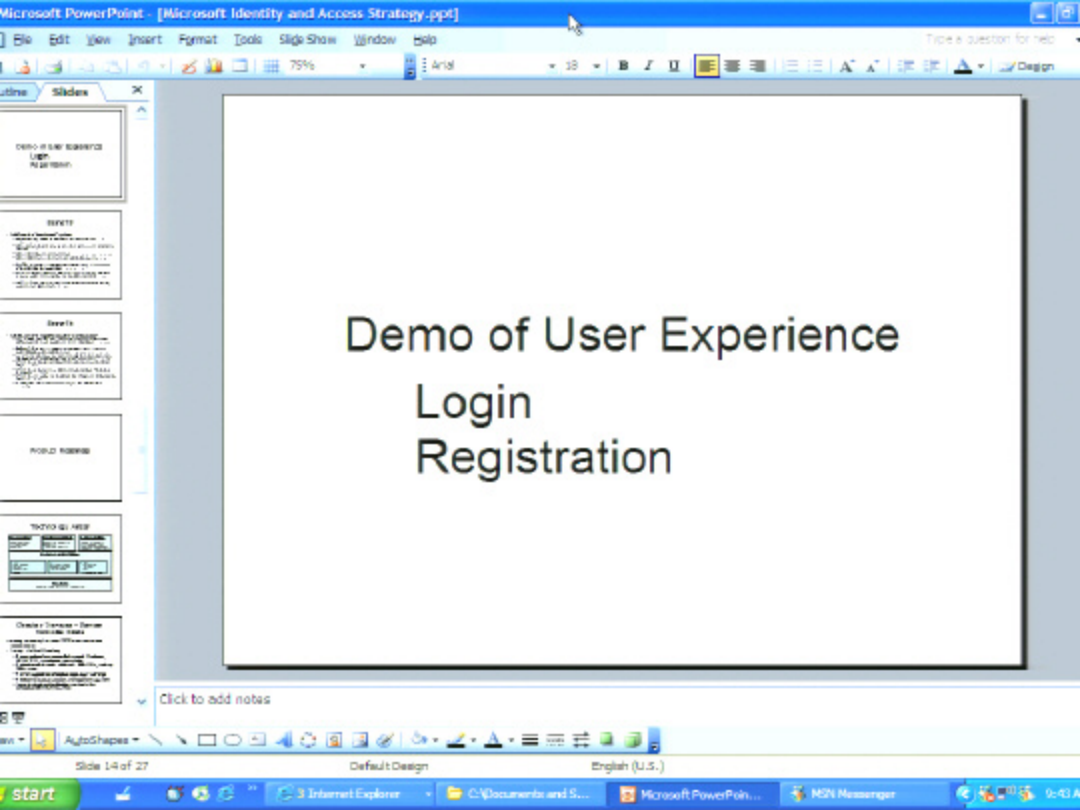
- Active Directory-integrated Security Token Services
- "InfoCard" end user experience
- "Indigo" web services runtime for application developers
- WS-* open, interoperable protocols

“InfoCard”

- Simple user abstraction
  - For managing collections of claims: identity claims, membership claims, possession claims, …
  - For managing keys for sign-in: strong computer generated keys instead of human generated passwords
- Grounded in real-world metaphor of physical cards
  - Gov’t ID card, driver’s license, credit card, membership card, …
- Support both self-issued and managed cards
  - Self-issued cards signed by user
  - Managed cards signed by external authority
- Implemented as secure subsystem
  - Protected UI, anti-spoofing techniques, encrypted storage

Demo of User Experience

- Login
- Registration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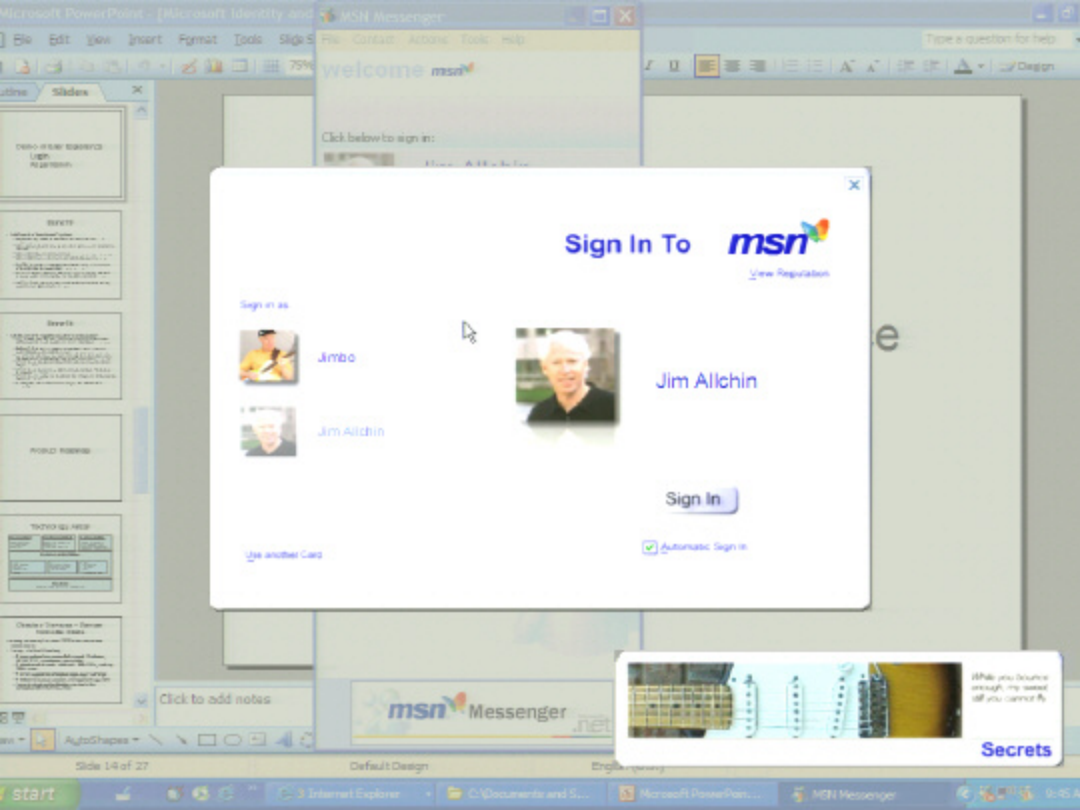
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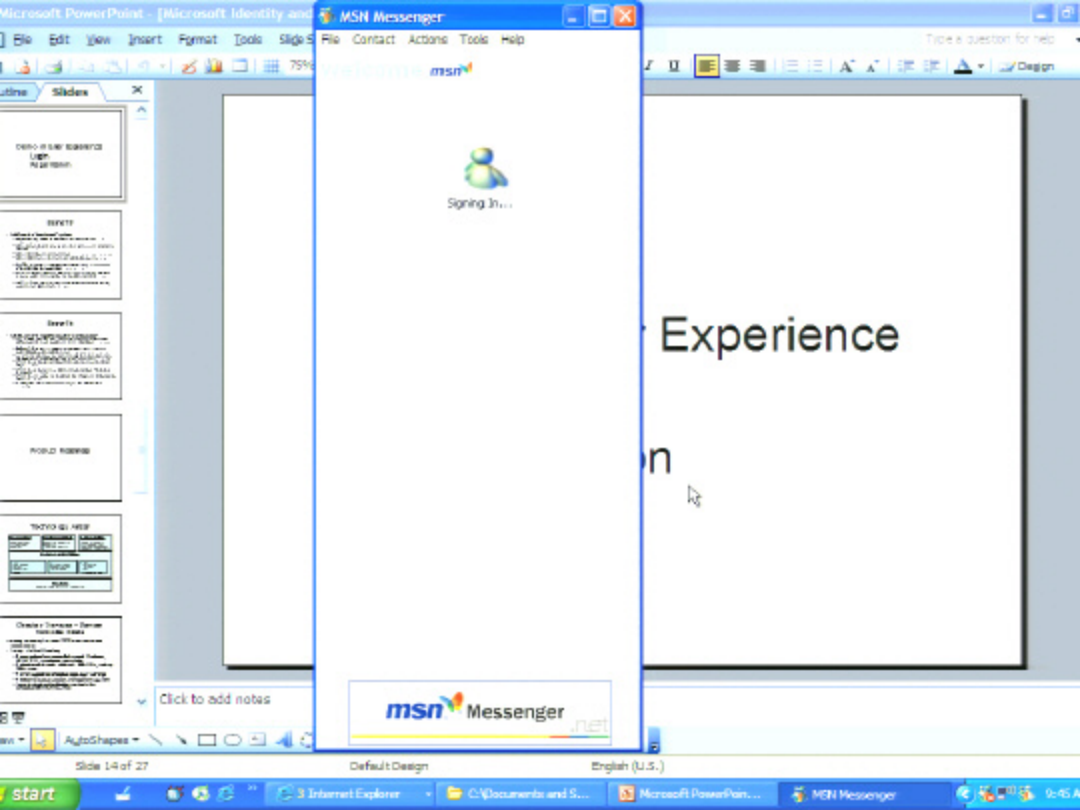
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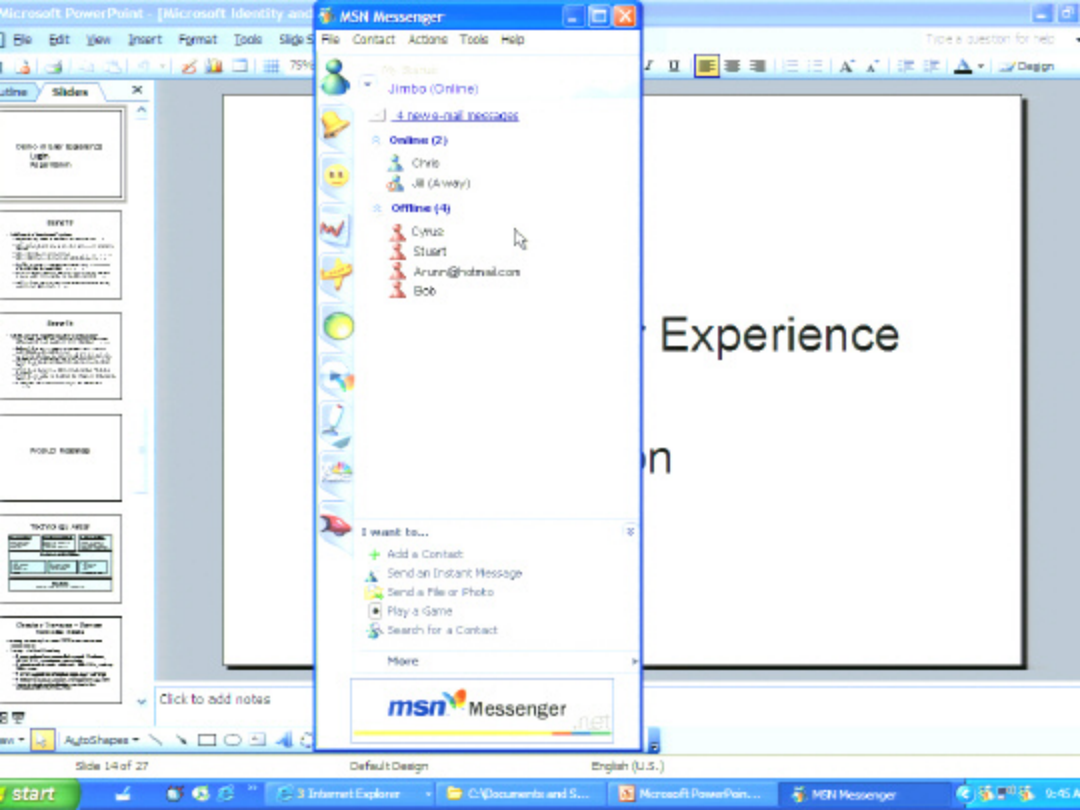
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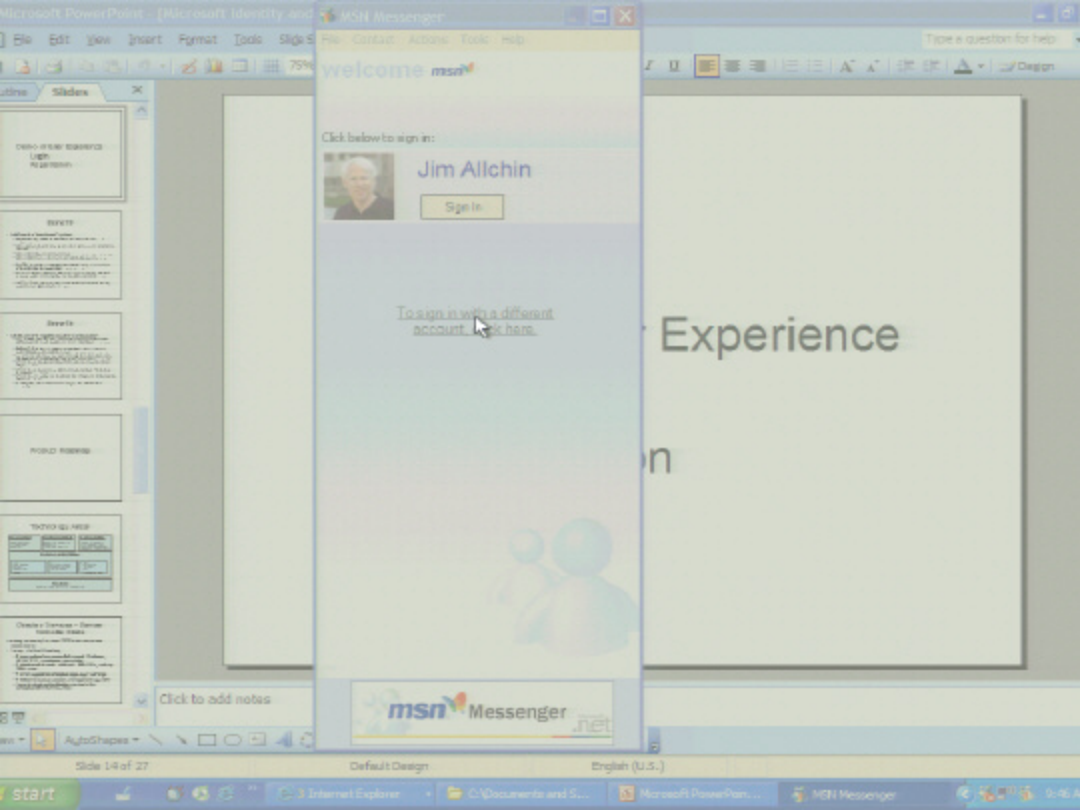
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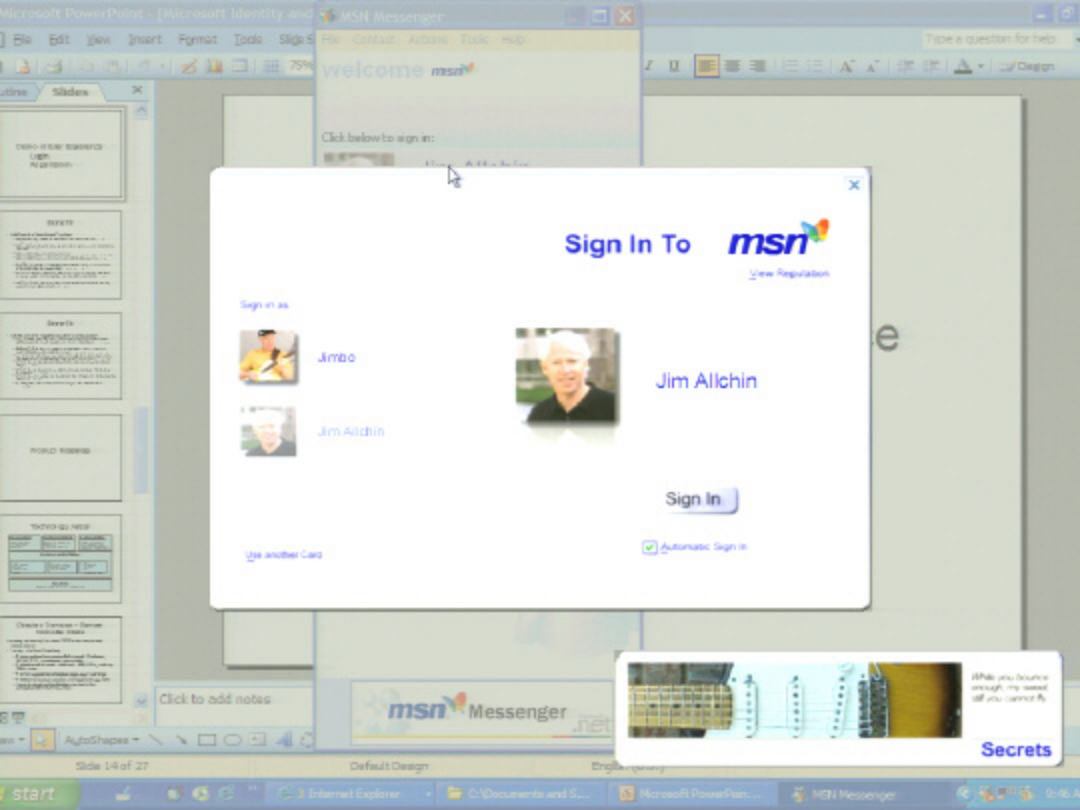
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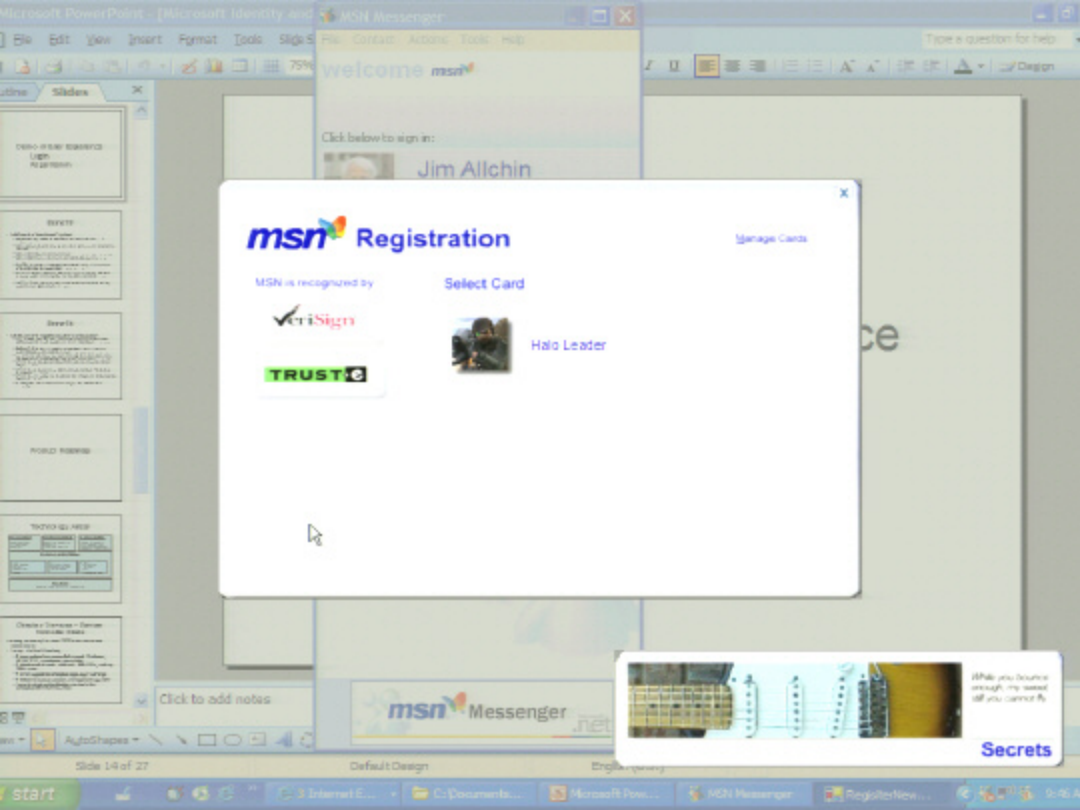
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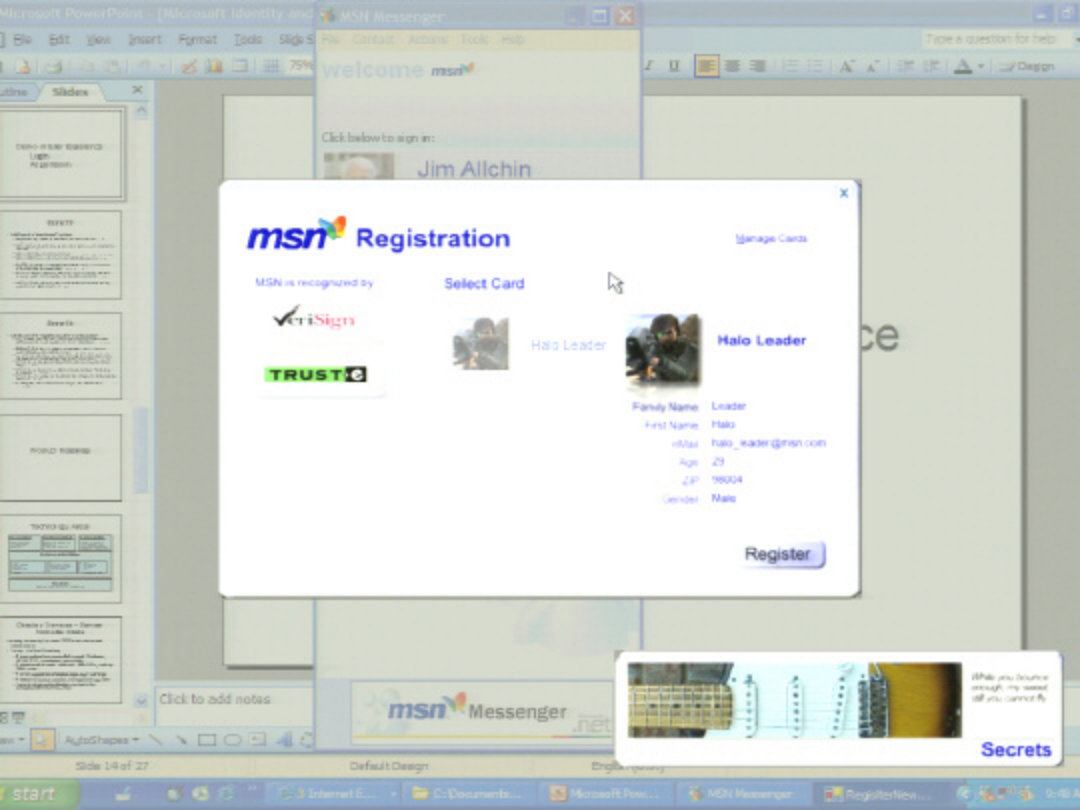
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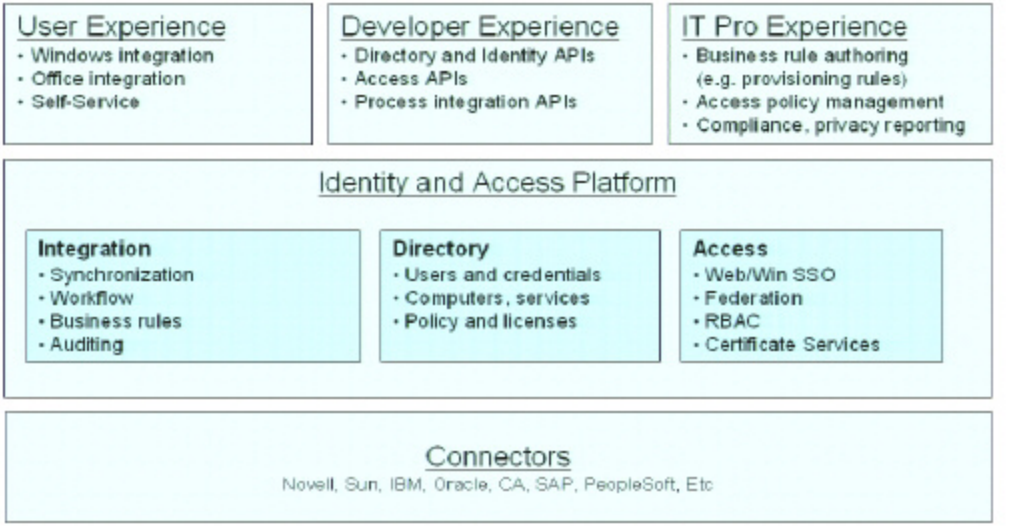
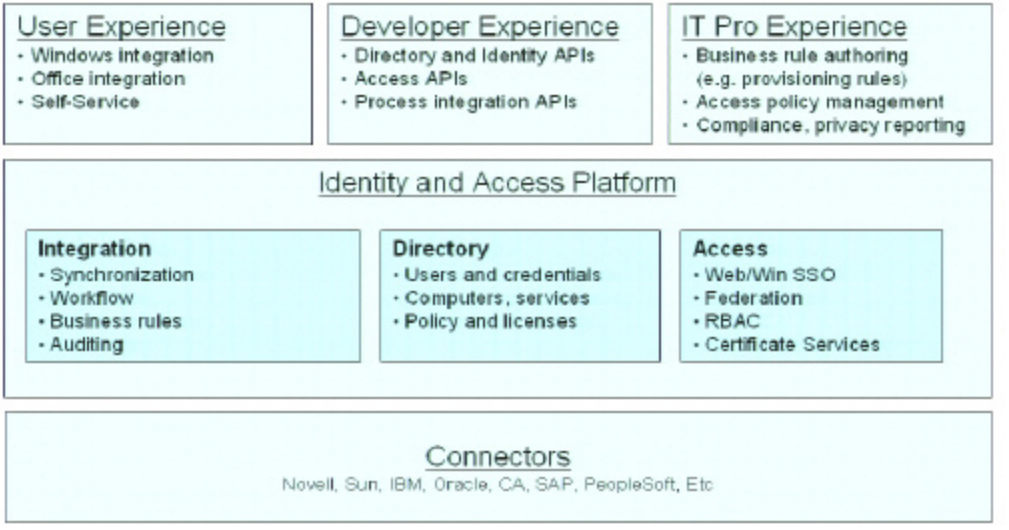
Product Roadmap

Technology Areas



Technology Areas

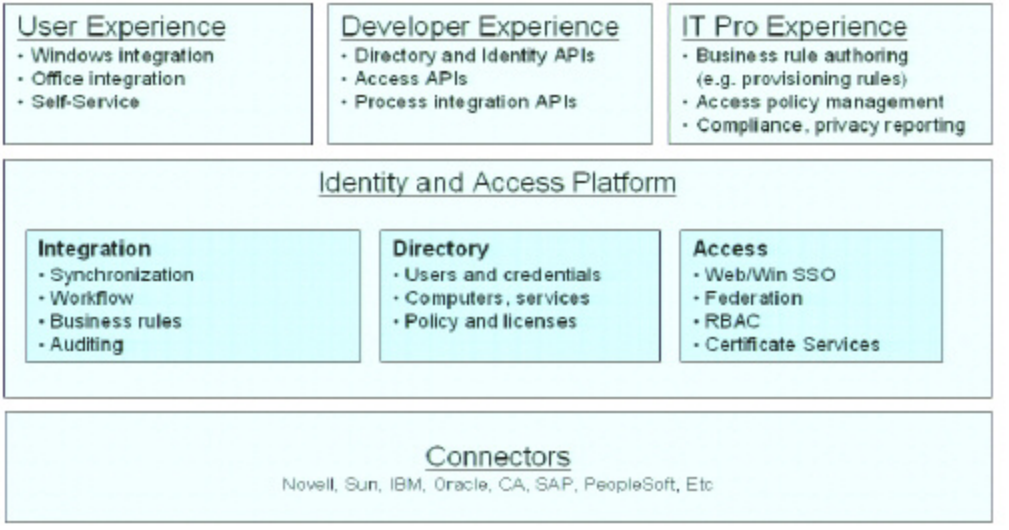


Product Roadmap

Demo of User Experience

- Login
- Registration

Technology Areas



Directory Services – Domain Controller Mode

Leading directory for host SSO and enterprise applications

- Today: Active Directory
  - Broad protocol and credential support: Kerberos, NTLM, SSL, smartcards, passwords
  - Performance at scale: scale out 1000+ DCs, scale up 20M+ users
  - Proven support for enterprise apps e.g. Exchange
  - Platform for secure systems management e.g. SMS
  - Trend to single authentication service in the enterprise for Unix/Linux, Mac

Directory Services – Domain Controller Mode (cont'd)

- R2
  - Unix compatibility schema
- Longhorn
  - Read-only DC: reduced physical security requirements, simplified manageability
  - Restartable AD: reduce domain controller reboots
  - DC on Server Foundation: minimize surface area
  - DC/Domain admin separation: simplified manageability

Directory Services – App Directory Mode

Flexibility in deployment for application developers and administrators

- Today: ADAM web download
  - LDAP-only mode of AD, virtually identical code as DC mode
  - Identical performance at scale
  - Independent schema, topology, and can be sync'd with AD
  - Suitable as extranet directory, app-specific directory
  - Redistributed by multiple vendors: Oblix, OpenNetwork, etc
- R2: ADAM included in OS distribution
  - Built-in one-way AD-to-ADAM sync, eliminates need to deploy MIIS/IIFP for simple scenarios
- Longhorn: same as R2

Access Services

Integrating federated claims-based identity and access capability into Active Directory

- Today
  - Comprehensive PKI support in platform
  - Role-based access control via Authorization Manager
  - Proven partnerships in extranet access management
- R2: Active Directory Federation Services v1
  - Federated web SSO
  - Interop-tested WS-Federation Passive Requestor Profile
  - Integrated with Windows SSO
  - Claims-based access model using SAML assertions
  - Federated SharePoint
- Longhorn: ADFS v1.1, AD STS, InfoCard

Integration Services

Improve security and reduce operational costs by automating and delegating identity and access management tasks

- Today: Microsoft Identity Integration Server 2003 SP1
  - Automate provisioning and de-provisioning
  - Enforce consistency of data across systems
  - Password management
- R2 wave: MIIS 2003 SP2
  - Reach: RACF/ACF2/Top Secret, SAP, Peoplesoft
  - Self service password reset

Integration Services (cont'd)

- Longhorn wave: MIIS "Gemini"
  - Advanced workflow
  - Advanced auditing and reporting
  - Declarative policy
  - Computed memberships
    - Staff DLs, building DLs
  - Self-service platform and applications
    - "AutoGroup"

Questions and Feedback